CLAIMS

- A Cu-based amorphous alloy comprising 90 percent by volume or more of amorphous phase having a composition represented by Formula: $Cu_{100-a-b}(Zr, Hf)_a(Al, Ga)_b$ [in Formula, a and b are on an atomic percent basis and satisfy 35 atomic percent \leq a \leq 50 atomic percent and 2 atomic percent $\leq b \leq 10$ atomic percent], wherein the temperature interval ΔTx of supercooled liquid region is 45 K or more, the temperature interval being 10 represented by Formula $\Delta Tx = Tx - Tg$ (where Tx represents a crystallization initiation temperature and Tg represents a glass transition temperature), a rod or a sheet having a diameter or thickness of 1 mm or more and a volume fraction of amorphous phase of 90% or more can be produced by a metal mold 15 casting method, the compressive strength is 1,900 MPa or more, the Young's modulus is 100 GPa or more, and the Vickers hardness is 500 Hv or more.
- A Cu-based amorphous alloy comprising 90 percent by volume or more of amorphous phase having a composition represented by
 Formula: Cu_{100-a-b}(Zr,Hf)_a(Al,Ga)_bM_cT_dQ_e [in Formula, M represents at least one element selected from the group consisting of Fe, Ni, Co, Ti, Cr, V, Nb, Mo, Ta, W, Be, and rare-earth elements, T represents at least one element selected from the group consisting of Ge, Sn, Si, and B, Q represents at least one
 element selected from the group consisting of Ag, Pd, Pt, and Au, a, b, c, d, and e are on an atomic percent basis and satisfy 35 atomic percent ≤ a ≤ 50 atomic percent, 2 atomic

percent \leq b \leq 10 atomic percent, $0 \leq$ c \leq 5%, $0 \leq$ d \leq 5%, $0 \leq$ e \leq 5%, and b + c + d + e \leq 15 atomic percent], wherein the temperature interval Δ Tx of supercooled liquid region is 45 K or more, the temperature interval being represented by Formula Δ Tx = Tx - Tg (where Tx represents a crystallization initiation temperature and Tg represents a glass transition temperature.), a rod or a sheet having a diameter or thickness of 1 mm or more and a volume fraction of amorphous phase of 90% or more can be produced by a metal mold casting method, the compressive strength is 1,900 MPa or more, the Young's modulus is 100 GPa or more, and the Vickers hardness is 500 Hv or more.

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